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10/784,319	02/20/2004	Martin Melchior	PO7978/LeA 36,317	2166
157 7590 07/27/2007 BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205			EXAMINER EGWIM, KELECHI CHIDI	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/784,319  
Filing Date: February 20, 2004  
Appellant(s): MELCHIORS ET AL.

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Robert S. Klemz  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 03/26/2007 appealing from the Office action mailed 09/22/2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is substantially correct, except that it summarizes the claimed method as one directed to "producing aqueous, emulsifier-free and solvent-free polyurethane-polyacrylate-hybrid-secondary dispersions." There is no such "aqueous, emulsifier-free and solvent-free" limitation to be found in the independent claim under appeal.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

WO 200177200

KAGERER ET AL.

10-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 3-5 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

While being enabling for reacting the polyisocyanates with . "at least one compound containing NCO-reactive groups", wherein any functionality of the NCO-reactive groups containing compounds may react with other non-NCO functionalities of the polyisocyanates, there is insufficient support in the originally filed disclosure for the limitation specifically reacting "the isocyanate groups of the polyisocyanates" and "'the isocyanate-reactive groups' of an isocyanate-reactive component", as is recited in the appeal claims.

Appellant is reminded that the polyurethane can be prepared in more than one stage and may already have its isocyanate groups of the polyisocyanates consumed before the final polymer is produced. The original description includes embodiments where, for instance, an intermediate polyurethane may be formed and then subsequently reacted with at least one reactant through functionalities other than isocyanate groups. Appellant is attempting to claim an intermediate embodiment of the process that is not

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defined or described in the originally filed specification, wherein, specifically, the "isocyanate groups" of the polyisocyanates are reacted with the "'the isocyanate-reactive groups' of an isocyanate-reactive components".

Claims 1-5 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kagerer et al. (WO 200177200).

In US 20030124357, which is the English language translation of WO 200177200, Kagerer et al. teach a process for preparing polyurethane-polyacrylate hybrid dispersions, comprising polymerizing vinyl monomers, such as hydroalkyl esters of acrylic acid, in the presence of saturated polyurethanes. The preparation of the polyurethanes involves reacting the, polyisocyanates with polyols (§ 53), wherein the polyurethanes, prior to reacting with the vinylically unsaturated acrylic acids, have molecular weights from 1500 to 5500 Daltons. (See §§ 23,46, 102) In § 137, Kagerer et al. teaches dispersing the non-aqueous solution of the polyurethane-polyacrylate hybrid in water to for a secondary dispersion.

The hydroxy functional isocyanate-reactive components of Kagerer et al. meet the requirements of the present claims, notwithstanding the additional step of adding thiol reactants to the intermediate polyurethane product to form the polyurethanes (A) prior to grafting. The hydroxy functional isocyanate-reactive components of Kagerer et al. meet the requirements for the isocyanate-reactive components in the present claims.

Thus, the requirements for rejection are met.

**(10) Response to Argument**

Regarding the 112 rejection and the argument that “preparing the polyurethane by reacting polyisocyanates with at least one compound containing NCO-reactive groups ....” inherently requires the “reaction of the isocyanate groups of the polyisocyanates with the isocyanate-reactive groups of the isocyanate-reactive component”, appellant is simply incorrect. The polyisocyanates may contain other none-isocyanate functionalities, such as acids, which may be reactive to the isocyanate-reactive group containing components, which may themselves be reactive to said non-isocyanate functionalities by non-isocyanate-reactive functionalities. Further, the polyisocyanates may be a blocked polyisocyanates in which the isocyanate groups are non-reactive and said blocked polyisocyanates can be reacted with isocyanate-reactive group containing components by other than said isocyanate reactive groups.

The Chemistry to form polyurethanes is not in question here. What is in question is the modification of a particular step of appellant’s invention that lack’s sufficient support in the original disclosure.

Regarding the 102 rejections based on Kagerer et al. and the argument that in Step (I), (A1) may only be reacted with the isocyanate-reactive groups of an isocyanate-reactive component consisting of at least one compound selected from (A2)-(A5), appellant is simply incorrect in the reading of the present claims. The language requiring the reaction of (A1) with at least one of (A2) -(A5), simply does not exclude additional

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reactions with compounds other than (A2)-(A5), in order to form the polyurethane (A). While the members of the groups (A2) to (A5) are closed by "consisting of", the claims as a whole are not closed to other reagents. The preamble of the independent claim recites a process "comprising" **NOT** "consisting of" steps (I), (II), (III) and (IV). Further the "reacting" step in Step (I) does not exclude other subsequent reactions in said Step (I). There is no limitation in claim 1 that would exclude a step involving other reagents, for instance, after the recited reaction step, but prior to completion of polyurethane (A) and step (II).

Regarding Step (II), appellant argues that the "polyurethane solution (A)" is merely polyurethane (A) in aqueous solution, however no such aqueous solution is recited in the claim. As a matter of fact, the claim requires step (II) to be carried out in a "non-aqueous phase" (see last line of step II). As is demonstrated above, there is no absolute exclusion of thiol groups as suggested by appellant.

Regarding the argument that a step between steps (I) and (II) to add thiol groups would result in polyurethane other than "polyurethane (A)" of step (I), the addition of the thiol group after the initial reaction in step (I) is still part of the step of preparing the "polyurethane (A)". Step (I) in the claim is not limited to the one reacting step. So long as this reacting step is satisfied, another step may also be involved in preparing polyurethane (A). Thus, any addition functionalities, such as thiols groups, are not excluded from the final polyurethane (A).

Finally, the present claim do not require "thiol-free polyurethane", thus, the thiol-containing final polyurethane of Kagerer, prior to grafting, is not exclude from the polyurethane of present claims. Kagerer does teach adding to the polyurethane (A), one or more vinylically unsaturated monomers (B), and subjecting the resultant mixture to free-radical polymerization, and subsequently dispersing the solution in water to form a secondary dispersion.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

KCE



Conferees:

  
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David Wu  
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